

REMARKS

Reconsideration of this application based on the foregoing Amendment and the following Remarks is respectfully requested.

In the applicant's response filed June 2, 2003 to the Office Action of January 30, 2003, the applicant cancelled claims 2, 5 and 9 and added new claims 15-17. Claims 4 and 10 were rewritten into independent form. Now, the Examiner has identified new grounds of rejection.

35 U.S.C. 112, Second Paragraph Rejections: Claims 6, 7 and 17

The Examiner has rejected both of claims 6 and 7 under 35 U.S.C. 112, second paragraph, because in line 2, there appears to be insufficient antecedent basis for the limitation "said backlight portion".

In response, the applicant maintains that the lack of antecedent basis arose because the applicant inadvertently failed to amend claims 6 and 7 to include the limitation "*a backlight portion for illuminating said liquid crystal display panel from the backside thereof*". This limitation originally appeared in now cancelled claim 2.

To overcome this rejection, the applicant has amended claims 6 and 7 to add the limitation: -- further comprising a backlight portion for illuminating said liquid crystal display panel from the backside thereof--. In that the subject matter originally appeared in claim 2 and was inadvertently not included within claims 6 and 7, no new matter has been added.

The Examiner has rejected claim 17, also under 35 U.S.C. 112, second paragraph, because there appears to be insufficient basis for the limitation “said nitride film” in line 24.

To overcome this rejection, the applicant has amended claim 17 to recite instead --[[said]] a nitride film--. No new matter has been added by the amendment to claim 17.

Consequently, the applicant respectfully requests the Examiner to withdraw the rejections of claims 6, 7 and 17 under 35 U.S.C. 112, second paragraph.

35 U.S.C. 103(a) Rejections: Claims 3-4

The Examiner has rejected claims 3-4 under 35 U.S.C. 103(a) allegedly as being unpatentable over Nishikawa (JP-232509 application published September 10, 1993) in view of Dojo et al (US 6,528,357 B2 - filed March 12, 1999 - issued March 4, 2003). Nishikawa was previously cited. Dojo et al is a new reference.

The basis cited by the Examiner for the rejection of claims 3-4 is essentially the same as in the previous Office Action January 30, 2003 with respect to Nishigawa and claims 2-7 and 9-13.

The Examiner now asserts that Nishikawa discloses an LCD device that is basically the same as that recited in claims 3 and 4 except for a nitride film disposed between said pixel electrode and said gate signal line in addition to the insulating film. The Examiner continues to assert that the Abstract of Nishikawa

discloses auxiliary capacitor portions (electrodes) 13 so that CSCA> CSCB> CSCC, thereby compensating electric charging characteristics and coupling-down and ΔV .

The Examiner now asserts that Dojo et al, column 4, lines 11-41, and FIG. 2, disclose an LCD device comprising an auxiliary capacitor portion whose capacitance is determined by an area of an opposing portion between a pixel electrode 131 of a pixel and a gate signal line 111 (scanning lines) coupled with an adjacent pixel via an interlayer insulating film 115/117 (first/second gate insulator film) and an interlayer dielectric film 127 made of silicon nitride between said pixel electrode 131 and said gate signal line 111 (scanning lines).

The Examiner asserts in addition that Dojo et al, column 5, lines 8-13, disclose that since three kinds of insulator or dielectric films 115, 117, 127 are laminated and disposed between the pixel electrode 131 and the scanning line 111 and between the pixel electrode 131 and elongate region 113, it is possible to successfully suppress occurrence of electrical interlayer shorting due to the inherent structure of the embodiment.

The Examiner asserts that therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the LCD device of Nishikawa with the teachings of Dojo et al by forming a nitride film (127) between said pixel electrode (131) and said gate signal line (scanning line 111) in addition to the insulating film (115/117) to suppress occurrence of electrical interlayer shorting which affects display quality.

In response, the applicant requested from the Examiner a copy of the English translation of JP 05-232509, Nishikawa, used by the Examiner. Such a copy was received by facsimile on November 6, 2003.

In addition, the applicant submitted Form PTOL-413A to request an interview with Examiner on November 18, 2003. The applicant indicated that the arguments to be presented are that neither Nishikawa nor Dojo et al, taken alone or in combination, disclose, teach, or suggest --the width of said gate signal lines becomes narrower and thereby capacitance of said auxiliary capacitor portions becomes smaller as the distance from the said gate signal input portion becomes larger--, as recited by claims 4, 10 and 17.

During the interview, the applicant maintained that although the Abstract and paragraphs [0012] and [0018] of Nishikawa disclose that auxiliary capacitances are formed at the overlap parts of the picture element electrodes 20 and auxiliary capacity electrodes 13 so that CSCA>CSCB>CSAC, thereby compensating electric charging characteristics and coupling-down ΔV even if a gate signal attenuates at the far end, neither Nishikawa nor Dojo et al disclose, teach or suggest the subject limitations of claims 4, 10 and 17 whereby the width of the gate signal line, as opposed to variations in the auxiliary capacity electrodes 13, becomes narrower and thereby capacitance of said auxiliary capacitor portions becomes smaller as the distance from the said gate signal input portion becomes larger.

As a result of the interview, the Examiner agreed with the applicant's arguments that Nishikawa does not disclose the subject limitations of claims 4, 10 and 17.

In that the applicant has demonstrated that neither Nishikawa nor Dojo et al disclose, teach or suggest the limitations of claims 4, 10 and 17, claims 3-4 patentably distinguish over Nishikawa and Dojo et al. As a result, the applicant respectfully requests that the Examiner withdraw the rejections of claims 3 and 4 over the prior art.

35 U.S.C. 103(a) Rejections: Claims 6-7 and 10-13

The Examiner has rejected claims 6-7 and 10-13 under 35 U.S.C. 103(a) allegedly as being unpatentable over Nishikawa in view of Dojo et al, as applied to claims 3 and 4 above and further in view of Taniguchi et al (US 6,334,689 B1 - filed February 25, 1999 - issued January 1, 2002). The Taniguchi et al reference was cited previously.

The Examiner's basis for the rejection of claims 6-7 and 10-13 is essentially identical to the previous rejection of claims 2-7 and 9-13. The Examiner asserts that the LCD device of Nishikawa as modified in view of Dojo et al above includes all that is recited in claims 6, 7 and 10-13 except for a backlight portion.

The Examiner concludes by asserting that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the LCD device of Nishikawa as taught by Taniguchi by employing a

backlight portion for illuminating said liquid crystal display panel from the backside thereof so that luminance of backlight by said backlight portion becomes lower as the distance from said gate signal input portion becomes larger so as to obtain a high image luminance and a high image display quality.

In response, the applicant calls to the Examiner's attention that the applicant has presented foregoing arguments in favor of claims 4, 10 and 17. Claims 6 and 7 depend from claim 4. Claims 11-13 depend from claim 10.

Consequently, the disclosure of Taniguchi et al does not overcome the deficiencies of Nishikawa and Dojo et al with respect to claims 4 and 10. As a result, claims 6-7 and 10-13 patentably distinguish over Nishikawa and Dojo et al in view of Taniguchi. Therefore, the applicant respectfully requests that the Examiner withdraw the rejections of claims 6-7 and 10-13 over the prior art.

35 U.S.C. 103(a) Rejections: Claims 15-17

The Examiner has rejected new claims 15 and 17 under 35 U.S.C. 103(a) allegedly as being unpatentable over Nishikawa in view of Dojo et al as applied to claims 3 and 4 above and further in view of the Applicant's Prior Art (FIG. 12 and Equation 6).

The Examiner has rejected claim 16 under 35 U.S.C. 103(a) allegedly as being unpatentable over Nishikawa in view of Dojo et al and Taniguchi et al as applied to claims 6, 7 and 10-13 and further in view of the Applicant's Prior Art (FIG. 12 and Equation 6).

Claim 15 depends from claim 4. Claim 17 is independent. Claim 16 depends from claim 10.

The Examiner asserts that the LCD device of Nishikawa as modified in view of Dojo et al includes all of the limitations of claims 15 and 17 except for the formula for calculating storage capacitance at a distance from the gate line input portion.

The Examiner further asserts that therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply Equation (6) of the Applicant's Prior Art to determine the relationship between storage capacitance values C_{sc} and $C_{sc'}$.

In response, the applicant calls to the Examiner's attention that the applicant has presented foregoing arguments in favor of claim 4 in that claim 4 recites the limitation of --the width of said gate signal lines becomes narrower and thereby capacitance of said auxiliary capacitor portions becomes smaller as the distance from the said gate signal input portion becomes larger--.

Since claim 4 patentably distinguishes over Nishikawa in view of Dojo et al, and the Applicant's Prior Art does not overcome the deficiencies of Nishikawa in view of Dojo et al with respect to claim 4, the applicant maintains that claim 15 patentably distinguishes over Nishikawa in view of Dojo et al as applied to claims 3 and 4 above and further in view of the Applicant's Prior Art (FIG. 12 and Equation 6).

In that claim 17 also recites the same limitation, claim 17 also patentably distinguishes over Nishikawa in view of Dojo et al and further in view of the Applicant's Prior Art (FIG. 12 and Equation 6).

Consequently, the applicant respectfully requests that the Examiner withdraw the rejections of claims 15 and 17 over the prior art.

Since claim 10 patentably distinguishes over Nishikawa in view of Dojo et al and further in view of Taniguchi et al and the Applicant's Prior Art does not overcome the deficiencies of Nishikawa in view of Dojo et al and Taniguchi et al, the applicant maintains that claim 16 patentably distinguishes over Nishikawa in view of Dojo et al and Taniguchi et al as applied to claim 6, 7 and 10-13 above and further in view of the Applicant's Prior Art (FIG. 12 and Equation 6).

Consequently, the applicant respectfully requests that the Examiner withdraw the rejection of claim 16 over the prior art.

The foregoing Amendment and Remarks establish the patentable nature of all of the claims remaining in the application, i.e., claims 3-4, 6-7, 10-13 and 15-17. No new matter has been added. Wherefore, early and favorable reconsideration and issuance of a Notice of Allowance are respectfully requested.

Respectfully submitted,

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